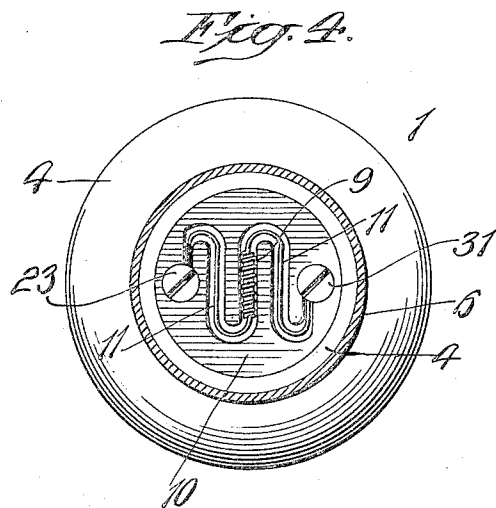
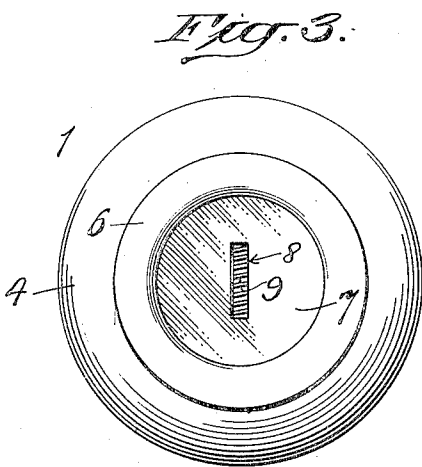
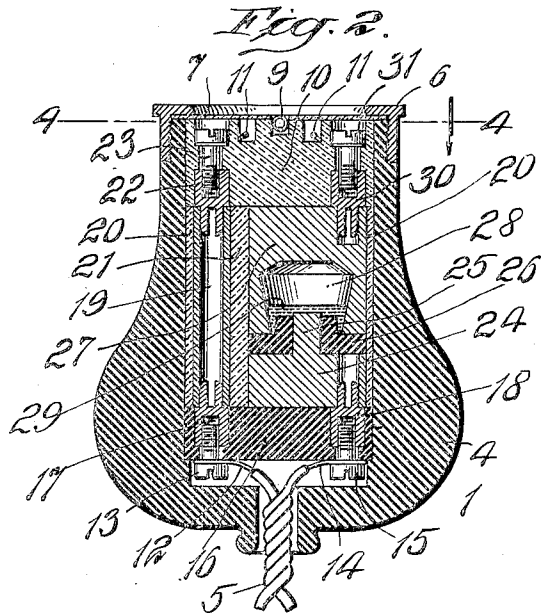
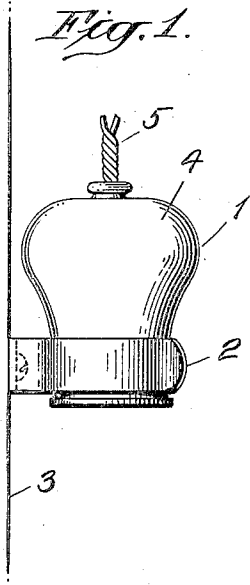


R. E. DE LOS MONTEROS.
ELECTRIC MERCURY SWITCH.
APPLICATION FILED AUG. 11, 1919.

1,351,101.

Patented Aug. 31, 1920.



Inventor
RAFAEL ESPINDA DE LOS MONTEROS
By *[Signature]*
O. Edwards

UNITED STATES PATENT OFFICE.

RAFAEL ESPINOSA DE LOS MONTEROS, OF NEW YORK, N. Y.

ELECTRIC MERCURY-SWITCH.

1,351,101.

Specification of Letters Patent. Patented Aug. 31, 1920.

Application filed August 11, 1919. Serial No. 316,530.

To all whom it may concern:

Be it known that I, RAFAEL ESPINOSA DE LOS MONTEROS, a subject of the King of Spain, and a resident of the city, county, and State of New York, (whose post-office address is 42 West 39th street, New York city,) have made a new and useful Improvement in Electric Mercury-Switches, of which the following is a specification.

The object of my invention is to provide a switch which is placed in the handle of any convenient instrument, as a cigar lighter, and is so made, arranged and disposed that when placed in one position the switch is open, and when placed in another position the switch is closed so that by a mere shifting of position, it is possible to turn a current on or off.

This object is accomplished by my invention, one embodiment of which is herein-after more particularly set forth.

For a more particular description of my invention, reference is to be had to the accompanying drawings, forming a part hereof, in which—

Figure 1 is a side elevation of one embodiment of my switch when applied to a cigar lighter, the switch being shown as held by a clip.

Fig. 2 is an enlarged longitudinal section of my improved switch.

Fig. 3 is an inverted plan view of the same.

Fig. 4 is a sectional view, taken on the line 4—4 of Fig. 2, looking in the direction of the arrows.

Throughout the various views of the drawings, similar reference characters, designate similar parts.

My improved switch 1 may be supported in any suitable way, as by a clip 2 secured to a wall 3, and it is provided with a handle 4 with a perforated top through which extends a suitable conductor 5, as a cable through which electricity is passed to the switch. The handle 4 may be made of any suitable material, but it is preferably made out of an insulating material as ebonite. At the bottom of the handle 4 is a metal or other ring 6 which is screw threaded to the ebonite handle and holds a mica plate 7 against the handle 4. In the embodiment

of my invention which is shown herein, this mica has a central opening 8 through which access may be had to a coil 9 of platinum or other wire of high resistance which has the capacity of being heated without oxidizing. This wire 8 rests in a porcelain or similar insulator 10 provided with suitable recesses to receive the coil 9 and the conductor 11 which runs to it, and is preferably integral herewith.

The cable 5 has one terminal 12 running to a screw 13, and the other terminal 14 running to a post 15, as shown in Fig. 2, and these posts are mounted in hard rubber or any other suitable insulating medium 16. The insulation 16 is perforated to receive sockets 17 and 18, the former of which is connected to the screw 13 and the latter to the screw 15. The socket 17 is secured to a metal tube 19 which is carefully mounted in suitable insulations 20 and 21, and at its end remote from the insulation 16 it engages a socket 22 secured in the insulation 10, and this socket has a screw 23 corresponding to the screw 13 which screw is connected to the conductor 11, as shown.

The insulation 20 is preferably in the form of a tube which rests snug in the bore of the handle 4 and runs from the insulation 16 to the insulation 10. It holds the insulation 21 in place which also extends from the insulation 16 to the insulation 10 and engages a metal plug 24 to which the socket 18 is secured, and this plug also rests in the insulation 16 and has a central projection 25 which extends through corresponding insulation 26 which supports the plug 24 from a second plug 27 which has a suitable cavity therein to form a chamber 28 with the insulation 26 and projection 25 so that mercury 29 in said chamber, when in the position shown in Fig. 2, forms an electrical connection between the projection 25 and the plug 27 and thereby closes the electric circuit at this point, and when the switch 1 is inclined or inverted, the mercury runs away from and uncovers the projection 25 and thereby opens the circuit at this point. The plug 27 has a socket 30 which corresponds to the sockets 22, 17 and 18, and this socket 30 is engaged by a screw 31 which is attached to the wire 11 so that

when the switch is in the position shown in Fig. 2, a complete circuit is formed from the cable 5, terminal 14 to the other terminal 12 as follows:

5 The wire 14 is attached to the screw 15, thence to the socket 18 to the plug 24 and thence through the projection 25, mercury 29, plug 27, socket 30 and screw 31 to the wire 11, and thence through the coil 9, wire 10 11, screw 23, socket 22, tube 19, socket 17, screw 13 to the wire 16. When the switch 1 is put in the position indicated in Fig. 1, the mercury 29 in the chamber 28 runs away from the point 25, as above described, and 15 thereby opens the switch.

From the foregoing, it is apparent that the circuit is closed when the switch is inverted and opened when the switch is upright.

20 While I have shown and described one embodiment of my invention, it is obvious that it is not restricted thereto, but is broad

enough to cover all structures that come within the scope of the annexed claim.

Having thus described my invention, what 25 I claim is:

A handle having a chamber in which is placed a plug having an insulated top and two screws, each of which engages a socket, a conducting tube attached to one socket 30 and a plug attached to the other, a projection on said plug and an insulation on the plug and surrounding said projection, a second plug mounted on the insulation with a cavity therein adapted to form a chamber 35 with the first mentioned plug and the insulation, mercury in said chamber and means for holding all of said parts in proper relation so that when the switch is held in one position, an electric circuit is closed through 40 the mercury and plugs, and when the switch is held in another position, a circuit is opened through the mercury and plugs.

RAFAEL ESPINOSA DE LOS MONTEROS.